

NO. 119

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name Barclay Elliott  
Joint Welding Procedure tig  
Part number and Job number 0 D350 636 012 / B32870

TEST WELDS REQUIRED

BASE METAL Aluminium WELDING PROCESS tig  
Penetration Complete ☐ Partial ☒ Single Weld ☒ Double Weld ☐  
Current AC ☒ DC ☐ Backing YES ☐ NO ☒

	Position	Vertical	Down <input type="checkbox"/>	Up <input type="checkbox"/>
Sheet Groove	1G <input type="checkbox"/>	2G <input type="checkbox"/>	3G <input type="checkbox"/>	4G <input type="checkbox"/>
Tube Groove	1G <input type="checkbox"/>	2G <input type="checkbox"/>	5G <input type="checkbox"/>	6G <input type="checkbox"/>
Sheet Fillet	1F <input type="checkbox"/>	2F <input type="checkbox"/>	3F <input type="checkbox"/>	4F <input type="checkbox"/>
Tube Fillet	1F <input type="checkbox"/>	2F <input type="checkbox"/>	4F <input type="checkbox"/>	5F <input type="checkbox"/>

Crossbolt Spacer Welded into Skid tube

TEST RESULTS

Visual Pass ☒ Fail ☐  
Penetration Pass ☒ Fail ☐  
Crossbolt Spacer Pass ☒ Fail ☐

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

Date of Test Coupon 07-07-19

Qualifier Pat Dwyer

UNDER REVIEW

01.01.05 CB

OK CB

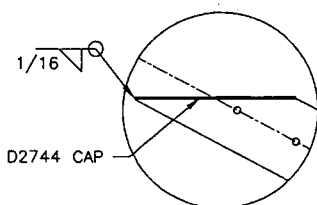
SEE DET. Q

DETAIL G

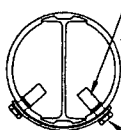
INSTALL NAS1330S3KB166  
WEARSHOE INSERTS (38 PLACES)  
AFTER FINISH

RELEASED  
06.01.07.11

DETAIL G



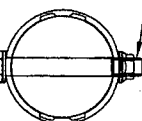
DETAIL K



USE AN3C7A BOLTS  
FOR INSTALLING AFT  
D2648-3 WEARPAD  
(4 PLACES)

AN3C5A BOLT (1)  
AN960C10L WASHER (1)  
NAS1515H3L WASHER (1)  
(38 PLACES)

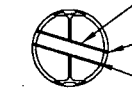
DETAIL P



AN8C35A BOLT (1)  
AN960C816L WASHER (2)  
NAS1515H8L WASHER (2)  
MS21083C8 NUT (1)

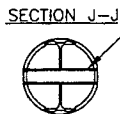
WORK ORDER  
32870  
CONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
ENGINEERING  
RETURN TO  
SHOP COPY

SECTION H-H



D2743 SPACER (REF)

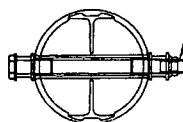
(TYP)



WELDING INSTRUCTIONS

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2743 SPACER
3. WELD INTO PLACE
4. GRIND FLUSH
5. DRILL OUT SPACER TO Ø0.484
6. SPOT FACE Ø0.750 (SECTION J-J ONLY)

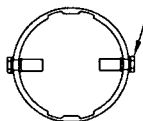
DETAIL M



AN6C44A BOLT (1)  
D2745 BUSHING (2)  
NAS1515H8L WASHER (2)  
MS21043-6 NUT (1)  
(4 PLACES)

NOTE: INSTALL WASHER BETWEEN  
SKIDTUBE AND BUSHING

DETAIL Q



AN3C6A BOLT (1)  
AN960C10L WASHER (1)  
NAS1515H3L WASHER (1)  
(4 PLACES)

D2750-043/-044 ASSEMBLY  
D2750-043 SHOWN (D2750-044 OPPOSITE)

BOND D2739 WEB INTO D2750-3 (OR D2750-4)  
OUTER TUBE WITH NON-STRUCTURAL  
SIKAFLEX-241 ADHESIVE PER DART QSI 015.  
NOTE: ENSURE THAT HOLES LINE UP.

BLACK ANTI-SKID

SEE DET. M

SEE DET. P  
SEE DET. N

D3488-041  
(OR D3488-042)

D2741

NO INSERT

WELDED SPACER  
NOT REQUIRED

SEE DET. K

SECTION T-T

D3490-1 SPACER

Ø0.500 HOLES ONLY

D3492-041 PLUG ASSEMBLY

SECTION U-U

D3490-5 SPACER

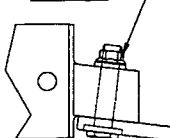
Ø0.313 HOLES ONLY

D3492-045 PLUG ASSEMBLY

WELDING INSTRUCTIONS

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D3490-5 SPACER (4 PLACES) INTO Ø0.313 HOLES OR INSERT D3490-1 SPACER (4 PLACES) INTO Ø0.500 HOLES
3. WELD INTO PLACE
4. GRIND FLUSH
5. INSERT D3492-045 PLUG ASSEMBLY (8 PLACES) INTO D3490-5 SPACER OR INSERT D3492-041 PLUG ASSEMBLY (8 PLACES) INTO D3490-1 SPACER ON BOTH ENDS

DETAIL N



AN8C21A BOLT (1)  
AN960JD816L WASHER (1)  
NAS1515H8L WASHER (1)  
MS21083C8 NUT (1)  
(2 PLACES)

COPYRIGHT © 1998 BY DART AEROSPACE USA, INC.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL  
AND IS SUPPLIED ON THE EXPRESS CONDITION  
THAT IT IS NOT TO BE USED FOR ANY PURPOSE  
OR COPIED OR COMMUNICATED TO ANY OTHER  
PERSON WITHOUT WRITTEN PERMISSION FROM  
DART AEROSPACE USA, INC.

DESIGN	PH	DRAWN BY	PH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, WA
CHECKED	#	APPROVED	#	DRAWING NO. D2750
DATE	06.01.05	TITLE	350 SKIDTUBE ASSEMBLY	REV. 0 SHEET 5 OF 5 SCALE 1:20

UNDER REVIEW

07.07.05 CB  
for wear plates

OK CB

**D2750-041/-042 ASSEMBLY**  
**D2750-041 SHOWN (D2750-042 OPPOSITE)**

INSTALL NAS1330S3KB166  
INSERTS (4 PLACES)  
AFTER FINISH

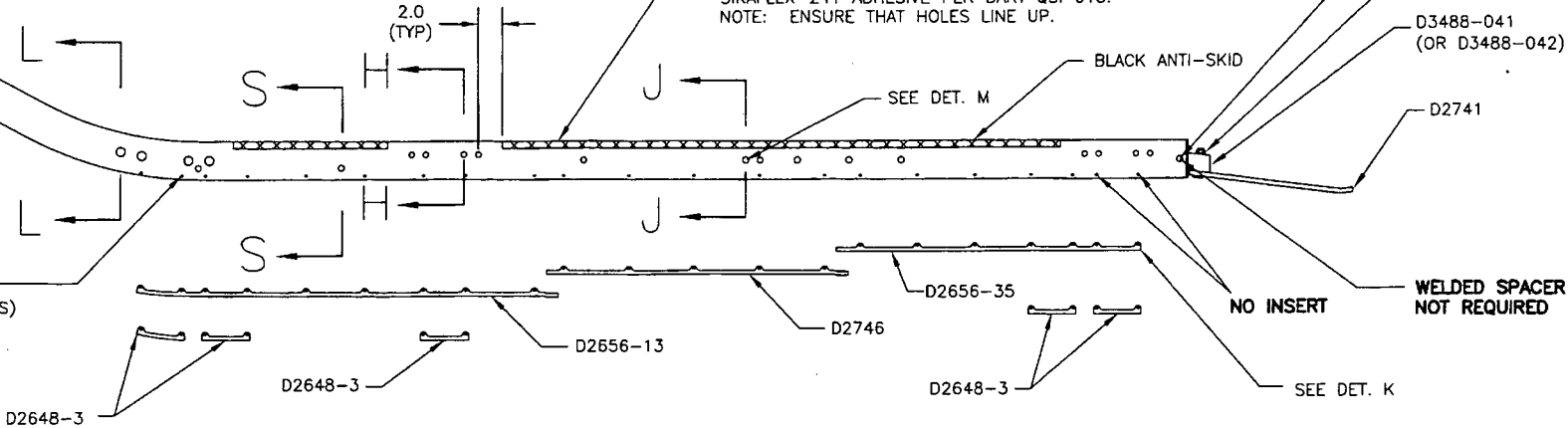
BOND D2739 WEB INTO D2750-1 (OR D2750-2)  
OUTER TUBE WITH NON-STRUCTURAL  
SIKAFLEX-241 ADHESIVE PER DART QSI 015.  
NOTE: ENSURE THAT HOLES LINE UP.

SEE DET. Q

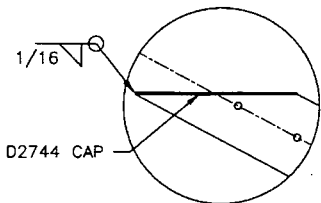
DETAIL G

INSTALL NAS1330S3KB166  
WEARSHOE INSERTS (38 PLACES)  
AFTER FINISH

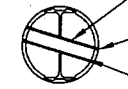
RELEASED  
06.02.07 #



DETAIL G



SECTION H-H



D2743 SPACER (REF)

(TYP)

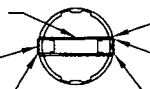
SECTION J-J



**WELDING INSTRUCTIONS**

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2743 SPACER
3. WELD INTO PLACE
4. GRIND FLUSH
5. DRILL OUT SPACER TO Ø0.484
6. SPOT FACE Ø0.750 (SECTION J-J ONLY)

SECTION L-L

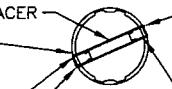


D3490-3 SPACER

Ø0.750 HOLES ONLY

D3492-043 PLUG ASSEMBLY

SECTION S-S



D3490-1 SPACER

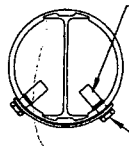
Ø0.500 HOLES ONLY

D3492-041 PLUG ASSEMBLY

**WELDING INSTRUCTIONS**

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D3490-1 SPACER (4 PLACES) INTO Ø0.500 HOLES OR INSERT D3490-3 SPACER (4 PLACES) INTO Ø0.750 HOLES
3. WELD INTO PLACE
4. GRIND FLUSH
5. INSERT D3492-041 PLUG ASSEMBLY (8 PLACES) INTO D3490-1 SPACER OR INSERT D3492-043 PLUG ASSEMBLY (8 PLACES) INTO D3490-3 SPACER ON BOTH ENDS

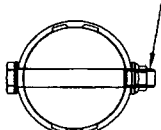
DETAIL K



USE AN3C7A BOLTS  
FOR INSTALLING AFT  
D2648-3 WEARPAD  
(4 PLACES)

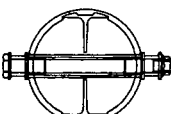
AN3C5A BOLT (1)  
AN960JD10L WASHER (1)  
NAS1515H3L WASHER (1)  
(38 PLACES)

DETAIL P



AN8C35A BOLT (1)  
AN960C816L WASHER (2)  
NAS1515H8L WASHER (2)  
MS21083C8 NUT (1)

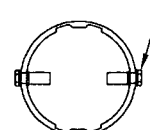
DETAIL M



AN6-44A BOLT (1)  
D2745 BUSHING (2)  
NAS1515H8L WASHER (2)  
MS21043-6 NUT (1)  
(4 PLACES)

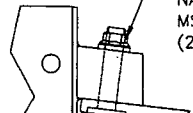
NOTE: INSTALL WASHER BETWEEN  
SKIDTUBE AND BUSHING

DETAIL Q



AN3C6A BOLT (1)  
AN960C10L WASHER (1)  
NAS1515H3L WASHER (1)  
(4 PLACES)

DETAIL N



AN8C21A BOLT (1)  
AN960JD816L WASHER (1)  
NAS1515H8L WASHER (1)  
MS21083C8 NUT (1)  
(2 PLACES)

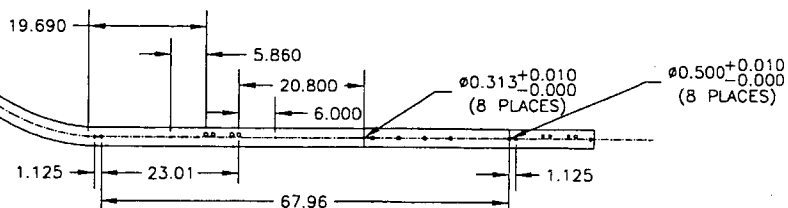
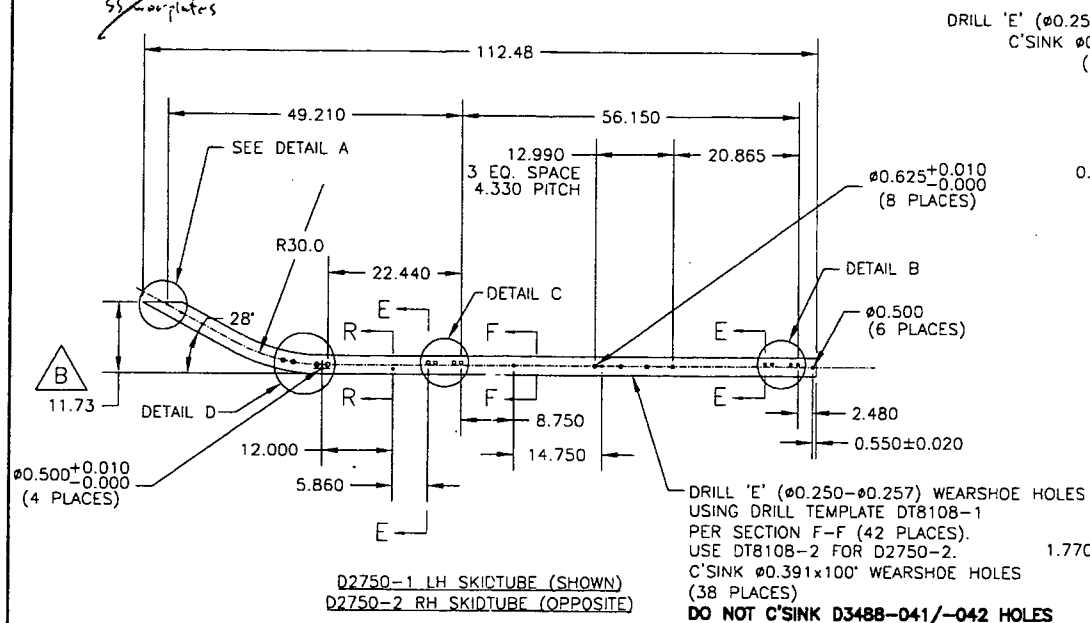
COPYRIGHT © 1998 BY DART AEROSPACE USA, INC.		DESIGN RH	DRAWN BY RH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, WA	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.		CHECKED H	APPROVED H	DRAWING NO. D2750	REV. D SHEET 4 OF 5
DATE 06.01.05		TITLE 350 SKIDTUBE ASSEMBLY		SCALE 1:20	

SHOF COPY  
RETURN TO  
ENGINEERING  
CONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 52870

~~SS war plates~~

ok  
CB

RELEASED  
a.02.07 #



D2750-3 LH SKIDTUBE (SHOWN)  
D2750-4 RH SKIDTUBE (OPPOSITE)

D2750-3/-4 AND D2750-1/-2 HAVE THE SAME SADDLE AND  
GROUND HANDLING HOLES

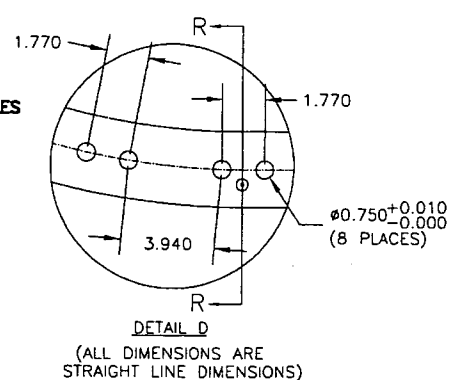
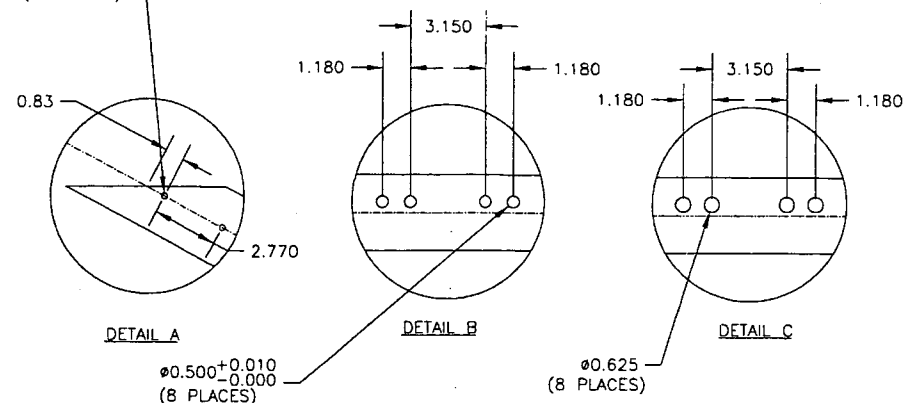
SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE

WORK ORDER  
**32870**

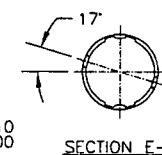
NO.

© 2006 THE McGRAW-HILL COMPANIES, INC. ALL RIGHTS RESERVED. PRINTED IN THE UNITED STATES OF AMERICA.

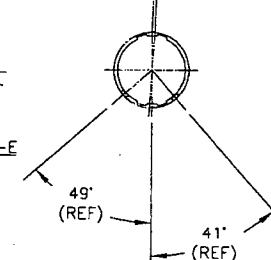
DRILL 'E' (Ø0.250-Ø0.257)  
C'SINK Ø0.291X100'  
(4 PLACES)



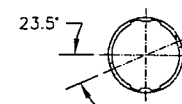
(FROM WEARSHOE CL  
TO SKIDTUBE CL.)  
0.110 -



SECTION E-E



SECTION F-F



SECTION R-R

**COPYRIGHT © 1988 BY DART AEROSPACE USA, INC.**

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL  
AND IS SUPPLIED ON THE EXPRESS CONDITION  
THAT IT IS NOT TO BE USED FOR ANY PURPOSE  
OR COPIED OR COMMUNICATED TO ANY OTHER  
PERSON WITHOUT WRITTEN PERMISSION FROM  
DART AEROSPACE USA, INC.

DESIGN	CL
--------	----

DRAWN BY

**DART** DART AEROSPACE USA, INC.  
PORT HADLOCK, WA

CHECKED

APPROVED

	DRAWING NO
--	------------

REV. D

DATE \_\_\_\_\_

TITLE	350 SKIDTUBE ASSEMBLY
-------	-----------------------

SCALE

1:20



DESIGN PH	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED PH	APPROVED PH	DRAWING NO. D2750	REV. 0 SHEET 2 OF 5
DATE 06.01.05		TITLE 350 SKIDTUBE ASSEMBLY SCALE NTS	

UNDER REVIEW

07-02-05 CB  
SS wearplates

OK  
CB

RELEASED  
06-02-07

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN INCHES
2. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
3. MAKE FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
4. DAMAGE TOLERANCE ON BENDING:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 12 INCHES ABOVE THE GROUND. NO GOUGING IS ACCEPTABLE IN THE FLAT PORTION OF THE TUBE. GOUGES UP TO 0.020 ARE ACCEPTABLE IN THE BENT PORTION OF THE TUBE. TUBE O.D. SHOULD BE  $3.150 \pm 0.010$  IN THE FLAT PORTION OF THE TUBE. TUBE O.D. SHOULD BE  $3.15 \pm 0.030$  IN THE BENT PORTION OF THE TUBE.
5. ALL HOLES DRILLED ON CENTERLINES EXCEPT THOSE NOTED BY SECTIONS E-E, F-F, AND R-R.
6. WELDING TO BE DONE PER DART QSI 004.
7. FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:  
MINIMUM YIELD TENSILE STRENGTH = 35 ksi  
MINIMUM ULTIMATE TENSILE STRENGTH = 38 ksi
8. FINISH:  
ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.  
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
9. INSTALL NAS1330S3KB166 INSERTS AFTER FINISH AS INDICATED IN D2750-1/-2/-3/-4 WELDING DETAIL ON PAGE 4 AND 5. DRILL 'E' SIZE HOLES ( $\emptyset 0.250$ -  $\emptyset 0.257$ ) FOR WEARSHOE INSERTS. C'SINK  $\emptyset 0.391 \times 100^\circ$  AND INSTALL INSERTS
10. D3488-041 (OR D3488-042) BLADE FITTING AND AN3-5A/AN3-7A WEARSHOE SCREWS TO BE INSTALLED USING SIKAFLEX-241 (OR EQUIVALENT) SEALANT.
11. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
12. APPLY A LAYER OF SIKAFLEX -241/-291 ADHESIVE BETWEEN THE BOTTOM OF THE SKIDTUBE ASSEMBLY AND THE WEARPLATES

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
NO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO 32870

Copyright © 1998 by DART AEROSPACE USA, INC.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.



DESIGN <i>PH</i>	DRAWN BY <i>PH</i>	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED <i>PH</i>	APPROVED <i>PH</i>	DRAWING NO. D2750	REV. D SHEET 1 OF 5
DATE 06.01.05		TITLE 350 SKIDTUBE ASSEMBLY SCALE NTS	
A	98.04.16	NEW ISSUE	
B	98.09.01	CHANGE MS24694-S293 TO AN8-16A	
C	98.11.18	ADD D2750-3/D2750-4 INCORPORATE D2738 AND D2740	
D	06.01.05	ADD HOLES AND SPACERS FOR APICAL FLOATS INCORPORATE DEO 9133/9157	

RELEASED  
06.02.07 *PH*

UNDER REVIEW *OK*  
*CB*

07.02.05 *CB*

*add gaskets  
change to SS wearplates*

Qty -041	Qty -042	Qty -043	Qty -044	Part Number	Description
X				D2750-041	SKIDTUBE ASSEMBLY, LH
	X			D2750-042	SKIDTUBE ASSEMBLY, RH
		X		D2750-043	SKIDTUBE ASSEMBLY, LH
			X	D2750-044	SKIDTUBE ASSEMBLY, RH
5	5	5	5	D2648-3	WEARPAD
1	1	1	1	D2656-13	WEARSHOE
1	1	1	1	D2656-35	WEARSHOE
1	1	1	1	D2746	WEARSHOE
1	1	1	1	D2739	WEB
1	1	1	1	D2741	BLADE
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
38	38	38	38	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN3C7A	BOLT
4	4	4	4	AN6C44A	BOLT
2	2	2	2	AN8C21A	BOLT
1	1	1	1	AN8C35A	BOLT
46	46	46	46	AN960C10L	WASHER
4	4	4	4	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
3	3	3	3	MS21083C8	NUT
42	42	42	42	NAS1330S3KB166	INSERT
46	46	46	46	NAS1515H3L	WASHER
12	12	12	12	NAS1515H8L	WASHER

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 32870

Copyright © 1998 by DART AEROSPACE USA, INC.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 6/7/2007 3:34:16 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350 SKIDTUBE ASSEMBLY RH

Job Number: 32870

Part Number: D350636012

Job Number:



Seq. #:

Machine Or Operation:

Description :

48.0

D34931

WASHER



SP



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)  
WASHER  
B 32600

49.0

D35321

spacer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)  
spacer  
B 27894 2/8/10 SP

50.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS  
En 09/08/25

51.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1  
Package as per PPP D350-636-012  
NEV R 27/8/29 (1)

52.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE  
H 07/08/29

Job Completion



U 8-08-29

32870



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: LD Date: 21/01/22  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350 SKIDTUBE ASSEMBLY RH

Job Number: 32870

Part Number: D350636012

Job Number:



Seq. #:

Machine Or Operation:

Description :

4-Coat all exposed fasteners with "LPS Procyon"  
batch: M104251

FX

41.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

En 07/08/09

42.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1  
Pick Packing Kit

43.0

D2741

Blade



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)  
Blade  
Batch: B32383

sq

44.0

AN960C816L

WASHER



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)  
Washer  
Batch: M104093

sq

45.0

MS21083C8

NUT



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)  
Nut  
Batch: M104625

sq

46.0

AN8C21A

BOLT



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)  
Bolt  
Batch: M105107

sq

47.0

NAS1515H8L

WASHER



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)  
WASHER  
Batch: M104955

7/8/10 sq

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 6/7/2007 3:34:16 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350 SKIDTUBE ASSEMBLY RH

Job Number: 32870

Part Number: D350636012

Job Number:



Seq. #:

Machine Or Operation:

Description :

35.0

AN960C816L

WASHER



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

WASHER

Batch: m 104093

FL

36.0

MS210436

NUT



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

NUT

Batch: m 103693

FL

37.0

MS21083C8

NUT



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

NUT

Batch: m 104625

FL

38.0

NAS1515H3L

WASHER



Comment: Qty.: 46.0000 Each(s)/Unit Total : 46.0000 Each(s)

WASHER

Batch: m 104603

FL

39.0

NAS1515H8L

WASHER



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

WASHER

Batch: m 104922

FL

40.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3"

batch: m 104161

3-Install blade fitting D3488-042, wearshoes and ground handling hardware as per dwg D2750

SIKA FLEX 241

BATCH: m 104989

EXP DATE: 08/01

FL 07/08/27

①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No:
PAR #:
Fault Category:
NCR: Yes No
DQA:
Date:

QA: N/C Closed:
Date:

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 6/7/2007 3:34:16 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350 SKIDTUBE ASSEMBLY RH

Job Number: 32870

Part Number: D350636012

Job Number:



Seq. #:

Machine Or Operation:

Description :

28.0

D3492043

PLUG ASSEMBLY



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)  
PLUG ASSEMBLY  
Batch: B30569 ~~(x5)~~

FL

29.0

AN3C5A

Bolt



Comment: Qty.: 38.0000 Each(s)/Unit Total : 38.0000 Each(s)  
Bolt  
Batch: m104885

FL

30.0

AN3C6A

BOLT



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)  
Bolt  
Batch: m103693

FL

31.0

AN3C7A

BOLT



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)  
BOLT  
Batch: m103668

FL

32.0

AN6C44A

BOLT



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)  
BOLT  
Batch: m104937

FL

33.0

AN8C35A

BOLT



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)  
BOLT  
Batch: m102671

FL

34.0

AN960C10L

washer



Comment: Qty.: 46.0000 Each(s)/Unit Total : 46.0000 Each(s)  
washer  
Batch: m105143

FL 07/08/27

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 6/7/2007 3:34:16 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350 SKIDTUBE ASSEMBLY RH

Job Number: 32870

Part Number: D350636012

Job Number:



Seq. #:

Machine Or Operation:

Description :

21.0

D26483

Wearpad



Comment: Qty.: 5.0000 Each(s)/Unit Total : 5.0000 Each(s)

Wearpad

Batch: B32465

FL

22.0

D265613

Wearplate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Wearplate

Batch: B31889

FL

23.0

D265635

Wearplate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Wearplate

Batch: B32873

FL

24.0

D2746

Wearshoe



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Wearplate

Batch: B30141

FL

25.0

D2745

Bushing



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Bushing

Batch: B31697 (x7)

B30817 (x1)

FL

26.0

D3488042

BLADE FITTING ASSEMBLY, RH



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Blade Fitting, LH

Batch: B32233

FL

27.0

D3492041

PLUG ASSEMBLY



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

PLUG ASSEMBLY

Batch: B32598

FL 07/08/2007 ①



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: AD Date: 07/08/27  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
07/08/21	16.0	Found a small piece of Sikaflex on the aft end of the tube from L.G that was never removed.	<i>[Signature]</i> 07/08/21	Remove small piece of Sikaflex and stuff entire tube  Re Powder Coat AS PER QS2004	<i>[Signature]</i> 07/08/21  <i>[Signature]</i> 07/08/25	<i>[Signature]</i> 07/08/27	<i>[Signature]</i> 07/08/21	

NOTE: Date & initial all entries

Date: Thursday, 6/7/2007 3:34:16 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350 SKIDTUBE ASSEMBLY RH

Job Number: 32870

Part Number: D350636012

Job Number:



Seq. #:

Machine Or Operation:

Description :

9-Spot face ground handling holes section J-J (total of 4 places per side) as per dwg D2750

10-Deburr holes

*J R 7-725*

14.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

*PD 07-07-26*

*(1)*

15.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*En 07/02/27*

*(1)*

16.0

POWDER COATING

POWDER COATING



*M105068*

*M-L*



*07/08/05*

*(IX)*

*(P10)*

Comment: POWDER COATING

Powder Coat Gloss White (Ref. 4.3.5.1) as per Dart QSI 005 4.3

*PRESS WASH*

*07/08/08*

*BR 0708-08*

17.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

Inspect for foreign object per QSI 024

*FL 07/08/27 (1)*

18.0

NAS1330S3KB166

INSERT



Comment: Qty.: 42.0000 Each(s)/Unit Total : 42.0000 Each(s)

INSERT

Batch: *m/04819*

*FL 07/08/27*

19.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts as per dwg D2750

*FL 07/08/27 (1)*

20.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Inspect Inserts

*En 02/08/27 (1)*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 6/7/2007 3:34:16 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350 SKIDTUBE ASSEMBLY RH

Job Number: 32870

Part Number: D350636012

Job Number:



Seq. #:

Machine Or Operation:

Description :

10.0

D34901

CROSS BOLT SPACER



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Crossbolt spacer

Batch:

*B 32293*

*BE 07-07-19*

11.0

D34903

CROSS BOLT SPACER



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Crossbolt spacer

Batch:

*B 33074*

*BE 07-07-19*

12.0

D2743

Crossbolt Spacer



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Crossbolt Spacer

Batch:

*B 31696*

*BE 07-07-19*

13.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open up holes of Detail V & Detail C to 0.625" (total of 8 holes per side)  
as per dwg D2750.

2-Open up holes of Detail D to 0.750" (total of 4 holes per side)  
as per dwg D2750.

3-Open float holes to .500" (4 per Side)

4-Chamfer holes of Detail V, Detail C, Detail D and hole size "W" per dwg D2750 (welding instructions on sheet 4)

5-Deburr and blow out all chips from inside of tube

6-Bond web D2739 in place as per QSI 015

A/R

Sikaflex-291

batch:

*M104732*

exp. date:

*8-1-1*

7- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004  
(welding instructions on sheet 4)

A/R

Aluminum Rod

batch:

*M104907 BE 07-07-19*

8-Grind welds flush as per Dwg D2750

*7-7-25*

## WORK ORDER CHANGES

W/O:							
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE (NCR)

NCR:								
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 6/7/2007 3:34:16 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350 SKIDTUBE ASSEMBLY RH

Job Number: 32870

Part Number: D350636012

Job Number:



Seq. #:

Machine Or Operation:

Description :

as per dwg D2750.

4-Drill pilot holes for Detail B using DT8330

5-Open up holes for Detail B, "hole size W" and blade fitting location holes to 0.500" (total of 9 holes per side) as per dwg D2750.

6-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 and open to 0.250" \*\*\*Make sure that wearplate holes are on bottom of tube\*\*\*\*\*

7-Open up holes of Detail A to 0.250" (total of 2 holes per side)

8- Countersink all fwd wearshoe holes (total of 19 holes per side) DO NOT C'SINK THE LAST AFT HOLES (total of 2 per side for blade fitting) as per dwg D2750.

9-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left from bending as per QSI 004  
A/R Aluminum Rod *m 102421 BE 07-06-21*

10-Grind welds flush as per Dwg D2750

11-Countersink Detail A as per dwg D2750.

5.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

6.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

7.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

8.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

9.0

D2739

350 I Beam



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Web

Batch:

*B 33062*

*A 7-7-18 R*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 6/7/2007 3:34:16 PM  
User: Kim Johnston

## Process Sheet

26

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: 350 SKIDTUBE ASSEMBLY RH
Job Number	: 32870		
Estimate Number	: 10265		
P.O. Number	: <b>NIA</b>	Part Number	: D350636012
This Issue	: 6/7/2007	S.O. No.	: <b>NIA</b>
Prsht Rev.	: NC	Drawing Number	: D2750- <del>UNDER REVIEW</del> <b>CB 07.06.08</b>
First Issue	: <b>NA</b>	Project Number	: N/A
Previous Run	: 32869	Drawing Revision	: D
	Type : LANDING GEAR	Material	: <b>NIA</b>
Written By	: <u><b>07.06.08</b></u>	Due Date	: 6/30/2007
Checked & Approved By	: <u><b>07.06.08</b></u>	Qty:	1 Um: Each
Comment	Est Rev: I 02.09.25 Rearranged procedure steps KJ Est Rev: J 06-03-29 As per Rev D EC Est Rev: J 06-07.13 As per dsi9343 EC		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	DC	DOCUMENT CONTROL
-----	----	------------------



Comment: DOCUMENT CONTROL

Photocopy blue file and type labels per PPP D350-636-012 CHG 002

**Er RS 07.06.08**

2.0	D26003BENT	Extrusion Bent
-----	------------	----------------



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2600-3-Bent

Extrusion (Bent)

**632448****7-6-18**

3.0	D2744	Fwd Cap
-----	-------	---------



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Cap

Batch:

**329784****BE 07-06-21**

4.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
-----	----------------	-------------------------



Comment: LANDING GEAR RESOURCE 1

1- Mark cut line on aft end of D2600-3-Bent using Jig DT 8150. Cut to length as per Dwg D2750. Deburr end

2- Drill pilot holes as per Dwg D2750 sheet 3 (D2750-1 details). Drill using drill Jig DT8150 & DT8863 drilling holes labelled "A" only.

3- Mark fwd end for cutting using Drill Jig DT 8150 & DT8863 and cut

**76-18**